



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,679	12/17/2003	Hideko Inoue	740756-2689	4095

22204 7590 07/23/2007  
NIXON PEABODY, LLP  
401 9TH STREET, NW  
SUITE 900  
WASHINGTON, DC 20004-2128

EXAMINER
----------

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
----------	--------------

1774

MAIL DATE	DELIVERY MODE
-----------	---------------

07/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/736,679	Applicant(s) INOUE ET AL.	
	Examiner Marie R. Yamnitzky	Art Unit 1774	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 11-56 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-32, 36, 37, 41, 42, 49-51 and 53-56 is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-22, 33-35, 38-40, 46-48 and 52 is/are rejected.
- 7) ☒ Claim(s) 43-45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's amendment filed on May 21, 2007, which amends claim 51, has been entered.

Claim 34 as set forth in the May 21<sup>st</sup> amendment also differs from the previous version of claim 34, although the status identifier for claim 34 is listed as "(Previously presented)" in the May 21<sup>st</sup> amendment. (The phrase "light emitting device" has been deleted after "The" in the first line of claim 1.)

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The rejection of claims 51-56 under 35 U.S.C. 103(a) as unpatentable over Thompson et al. (US 2002/0034656 A1) is overcome by applicant's amendment filed May 21, 2007. (The rejection of claim 52 is considered to be overcome because claim 52, as dependent from claim 51, limits M to an element of Group 9 and limits n to 1. The recitation of "iridium" in claim 52 is inconsistent with the limitations of "M" as set forth in claim 51.)

Art Unit: 1774

4. Claim 52 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The application as originally filed does not provide support for an organometallic complex represented by general formula 2 wherein M is iridium and n is 1, and/or wherein M is an element of Group 10 and, at the same time, M is iridium. Iridium is an element of Group 9 rather than Group 10, and as taught in the original disclosure, when M is an element of Group 9, n is 2.

5. Claim 52 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "M is iridium" in claim 52 is inconsistent with the limitations of claim 51, from which claim 52 depends and which requires M to be an element of Group 10.

6. Claims 1-3, 11-16, 33, 34, 38, 39, 46 and 47 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2002/0034656 A1) for reasons of record in the Office action mailed February 21, 2007.

7. Claims 17-22, 35, 40 and 48 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2002/0034656 A1) further in view of Yamazaki et al. (US 2001/0050373 A1) or Kamatani et al. (US 2003/0059646 A1) for reasons of record in the Office action mailed February 21, 2007.

8. Applicant's arguments filed May 21, 2007 have been fully considered but they are not persuasive with respect to the patentability of claims 1-3, 11-22, 33-35, 38-40 and 46-48 over the applied prior art.

Applicant argues that by using an electron donating group such as alkyl as  $R_2$ , both fluorescence and phosphorescence can be achieved. Applicant refers to page 13, lines 7-11 of the present specification and argues that emission of both fluorescence and phosphorescence is achieved "not through the use of a hydrogen atom, but through the use of an alkyl group or the like as  $R_2$ ." The examiner notes that while the teachings at page 13, lines 7-11 imply that the presence of an electron donating group such as an alkyl group may lead to higher efficiency with respect to emission of both fluorescence and phosphorescence, the teachings at page 7 and 8 imply that components of fluorescence and phosphorescence are achieved for the full scope of organometallic complexes of Formula 2 as defined on page 8, wherein  $R_2$  may be hydrogen. Further, the present claims do not limit  $R_2$  to an electron donating group. Rather,  $R_2$  is limited to "an alkyl group, an aryl group, a substituted aryl group, a heterocyclic group, or a substituted heterocyclic group," and this claim language encompasses electron withdrawing groups as well as electron donating groups. There is also no objective evidence of record to demonstrate

superior/unexpected results achieved by any particular substituent (or type of substituent) at the R<sub>2</sub> position.

Applicant argues that Thompson does not suggest that by substituting an electron donating group for the H in the R<sub>2</sub> position, both fluorescence and phosphorescence can be achieved. As previously noted by the examiner in response to similar arguments filed November 30, 2006, the fact that applicant has recognized another advantage that would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant argues that neither Thompson's teachings regarding substitution with an electron donor or electron acceptor, nor other teachings referenced by the examiner, suggest that substitution of an electron donor at a particular place on a particular organometallic complex would achieve phosphorescence. Applicant argues that organometallic compounds having obvious derivations of Thompson's phenylimine ligands would not be phosphorescent; that phosphorescence only exists when the hydrogen (at the present R<sub>2</sub> position) is substituted with an electron donating group. Since Thompson's application is directed to organometallic complexes that can be used as phosphorescent emitters, it is the examiner's position that it is reasonable to expect that organometallic complexes having phenylimine ligands taught or suggested by Thompson would be phosphorescent. In the event that applicant intended to argue that Thompson's teachings do not suggest that both fluorescence and phosphorescence would be achieved with the organometallic complexes, the examiner maintains the position that the

complexes as encompassed by the rejected claims would have been obvious to one of ordinary skill in the art at the time of the invention given Thompson's teachings, and the emission characteristics recited in various rejected claims will be inherent in those complexes.

Applicant's arguments also imply that because Thompson's phenylimine ligand structure shown in Fig. 49 has a hydrogen at the present R<sub>2</sub> position, one of ordinary skill in the art would not be motivated to make similar compounds having a phenylimine ligand structure having an alkyl or aryl group at the present R<sub>2</sub> position. The examiner respectfully disagrees. Applicant's arguments appear to ignore that Thompson's teachings in paragraphs [0172]-[0173] clearly suggest that phenylimine ligands having an alkyl or aryl group at the present R<sub>2</sub> position can be used to make organometallic complexes that can be used for the same purposes as organometallic complexes made with the phenylimine ligand structure shown in Fig. 49.

9. Claims 23-32, 36, 37, 41, 42, 49-51 and 53-56 are allowed.

Claim 52 would be allowable if amended to delete "iridium or" from line 2 of claim 52.

10. Claims 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1774

11. Claim 34 is objected to because of the following informalities:

The preamble of claim 34 is incomplete; --light emitting device-- should be inserted after "The" in line 1.

Appropriate correction is required.

12. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
July 16, 2007



MARIE YAMNITZKY  
PRIMARY EXAMINER

1774